

REQUEST FOR RECONSIDERATION

Independent Claim 1 is drawn to a crystalline polyester that contains polycondensed units of 1,6-hexanediol and fumaric acid. The crystalline polyester has characteristics including (i) a ratio of the softening point to the maximum peak temperature of heat of fusion of from 0.6 to 1.3, (ii) a tetrahydrofuran-soluble component having a number-average molecular weight of from 1500 to 10000, and (iii) a softening point of from 50° to 120°C.

Applicants have shown in the Examples of the specification that crystalline polymers having a tetrahydrofuran-soluble component that does not meet the number-average molecular weight requirement of the present claims are unable to provide toners having the desirable properties of the claimed polyester. Applicants prepared a number of crystalline polyesters for which compositional data and physical characteristics are provided in Tables 1 and 2 on pages 15 and 16 of the specification. Two of the resins in Tables 1 and 2 do not meet the tetrahydrofuran-soluble number-average molecular weight requirement of the present claims (i.e., Resin d and Resin i having values of 895 and 1215, respectively). These resins are tested against the resins of the invention in Table 5 on page 25 of the specification. Although Resins d and i meet all of the requirements of the present claims except for the number-average molecular weight of the tetrahydrofuran-soluble component, these resins are unable to provide the "Suppressive Ability of Staining in Machine" properties of the inventive crystalline polyesters. As shown in Table 5 (see column 7 of the Table 5) Resins d and i do not provide satisfactory performance whereas the resins of the invention provide excellent or good performance.

Thus, Applicants have shown that the crystalline polyester of the invention provides significantly superior performance in comparison to crystalline polyesters that are unable to meet the tetrahydrofuran-soluble component number-average molecular weight requirement of the present claims.

The Office rejected the present claims under obviousness-type double patenting in view of the claims of U.S. 6,998,212 ("the '212 patent"); 6,890,895 ("the '895 patent"); and 2005/0147911 ("the '911 publication"). As support for the rejection the Office asserts that the aforementioned patents and/or application disclose a crystalline polyester containing reacted units of 1,6-hexanediol and fumaric acid that inherently has the characteristics of the presently claimed crystalline polyester. Applicants traverse the rejection on the ground that the Office mischaracterizes the disclosure of the patents and/or application and further on the ground that the rejection under obviousness-type double patenting is not supportable.

The Office appears to assert that because one or more of the patents and/or the co-pending application discloses that 1,6-hexanediol can be used in combination with fumaric acid to make a crystalline polymer, that any such polymer would inherently have the characteristics recited in the present claims.

Applicants submit that this is not correct. Applicants prove in the Examples of the present specification that crystalline polyesters made from 1,6-hexanediol and fumaric acid in the quantity required in the present claims, and having the softening point properties recited in the present claims do not inherently have a tetrahydrofuran-soluble component having a number-average molecular weight of 1500 to 10000. Applicants draw the Office's attention to the resins described in Tables 1 and 2 on pages 15 and 16 of the specification. In particular, Resin i is a polyester that contains 1,6-hexanediol and fumaric acid in the quantities required by the present claims. Further, the softening point to the peak temperature heat of fusion ratio is 0.95 and the softening point is 87.3°C, both within the limitations of the present claims. However, the number-average molecular weight of the tetrahydrofuran-soluble component is only 1215 for Resin i (i.e., falling outside the present claims).

Likewise, Resin d of Table 1 has a number average molecular weight of the THF soluble component of 895. These values of the number-average molecular weight of the

tetrahydrofuran-soluble component are outside the present claim limitations which require a number-average molecular weight of the tetrahydrofuran-soluble component value of 1500-10,000.

Applicants have thus shown that the polyesters asserted by the Office to be suggested by the cited patents and/or co-pending application do not inherently meet all of the requirements of the present claims. The rejections cannot therefore be sustained on this ground.

During a discussion with Applicants U.S. representative on October 19, 2006, the Examiner stated that the data of the Tables of the present application are not convincing because, for example, some of the resins such as Resins h and i have the same composition and meet the softening point and softening point ratio requirements of the present claims. The Examiner appeared to be of the opinion that because the compositions of these resins are the same, the resins should all meet the THF soluble molecular weight limitation.

Applicants draw the Office's attention to page 14, lines 15-20 of the specification. This disclosure of the specification states that the components of the resins are reacted "until a resin having a desired molecular weight was obtained". Thus, even though Resins h and i are made from the same monomer mixture, the resins are not the same. For example the resins may have different molecular weight.

This makes sense when one looks at the limitations of Claim 1 which includes a certain point. Applicants submit that it is readily evident that the softening point of a polymer is related to its molecular weight (e.g., the degree of polymerization). A high softening point indicates a higher molecular weight.

This aspect of the invention is already included in the claims. Applicants thus submit that the data of the original specification do in fact relate to different resins, e.g., Resins h and

i must be different because they have a different softening point and the data is probative of the patentability of the claimed subject matter.

Applicants further traverse the obviousness-type double patenting rejections on the ground that the Office improperly turns to the disclosure of the patents and/or co-pending application in support of the rejection. Applicants draw the Office's attention to M.P.E.P. § 804(II)(B)(1) which states, in part (underlining added for emphasis):

When considering whether the invention defined in a claim of an application is an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art. This does not mean that one is precluded from all use of the patent disclosure.

The specification can always be used as a dictionary to learn the meaning of a term in the patent claim. (Citations omitted.) Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent....

None of the claims of the '212 patent, the '895 patent or the '216 application recite 1,6-hexanediol. Likewise, none of the patents and/or the co-pending application disclose a requirement that the number-average molecular weight of the tetrahydrofuran-soluble component of the crystalline polyester have a value of from 1500 to 10,000.

Applicants submit that because the claims of the patents and/or the application do not disclose all of the present claim limitations, the rejection under obviousness-type double patenting is improper and should be withdrawn.

Applicants further submit that the obviousness-type double patenting rejection is not supportable in view of Applicants' showing that crystalline polyesters meeting all of the present claim limitations (i.e., having a tetrahydrofuran-soluble component with a number-average molecular weight of from 1500 to 10,000) are unable to provide significantly superior toner properties (see discussion above).

Applicants submit that the claimed crystalline polyester is able to provide performance characteristics that are substantially better than the performance characteristics of generic crystalline polymers or the crystalline polymers of the patents and application cited in support of the obviousness-type double patenting rejection (i.e., crystalline polymers that do not meet the tetrahydrofuran-soluble number-average molecular weight requirement of present Claim 1).

Thus, the presently claimed invention is patentable over the patents and/or the co-pending application cited by the Office.

The Office further rejected the claims as anticipated and/or obvious in view of the '212 and '695 patents. As was stated above, Applicants have shown that not all crystalline polyesters meeting the 1,6-hexanediol and fumaric acid requirements of the present claims inherently have the tetrahydrofuran-soluble number-average molecular weight characteristics required by the presently claimed invention. Thus, the rejection of the present claims as anticipated in view of the cited prior art is not supportable and should be withdrawn.

With respect to the '212 patent, Applicants note that the subject matter of the present invention and the '212 patent were commonly owned at the time the subject matter of the present application was invented. Applicants have thus disqualified the '212 patent as prior art under the provisions of 35 U.S.C. § 103(c).

With respect to the rejections in view of the '695 patent, Applicants again point to the data discussed above showing that the claimed invention is able to provide significantly superior performance in comparison to crystalline polyesters that are unable to meet the tetrahydrofuran-soluble number-average molecular weight characteristic recited in the present claims. Applicants thus submit that the claimed invention is not obvious in view of the '695 patent and the rejection should be withdrawn.

The Office further rejected the claims as anticipated and/or obvious in view of a patent to Aoki (U.S. 6,383,705). Applicants submit that the Office's rejection of the present claims as anticipated in view of Aoki is wholly unsupportable.

The Office points to various disparate disclosure of Aoki as support for the anticipation rejection. At the outset, Applicants note that Aoki nowhere discloses a particular crystalline polymer meeting all of the present claim limitations. In fact, using hindsight, one has to search carefully through Aoki to consciously pick and choose the requirements of the present claims in order to at least partially create the claimed subject matter. For example, Aoki discloses a long list of alcohol-monomer units that may be used in the prior art crystalline polyester at column 2, lines 40-66. Although 1,6-hexanediol is named (see column 2, line 42) it is disclosed as part of a collection of polyhydric alcohols that is virtually limitless and for which at least 30 particular species and/or sub-families are explicitly disclosed.

To get around this deficiency of Aoki, the Office appears to rely on Table 1 of the Aoki patent. The Office cites to Resins B and I of Table 1 as support for the rejection. However, the number-average molecular weight of the tetrahydrofuran-soluble component of Resins B and I are 1230 and 986, respectively. Such values are outside the range presently claimed, e.g., 1500-10000.

In a further attempt to cure the deficiency of Aoki the Office cites to Resin K as support that the number-average molecular weight of the tetrahydrofuran-soluble component may lie within the range presently claimed (i.e., Resin K has a value of 4120). The trouble with such logic is the fact that Resin K does not include fumaric acid as presently claimed and is therefore not representative of the presently claimed invention.

Moreover, Resin K is used in a comparative example (see Comparative Example 3 in Tables 3 and 4). It is readily evident from Table 4 that Comparative Example 3 is

substantially inferior and wholly unsuitable for the purpose of the Aoki invention. In fact, Resin K is unable to provide good pulverizability or blocking resistance. Thus, not only does Aoki not disclose the presently claimed invention, the Examples of Aoki teach away from the presently claimed invention by showing that the only example having a tetrahydrofuran-soluble number-average molecular weight of from 1500 to 10000 provides inferior performance.

Applicants thus submit that those of ordinary skill in the art would have no motivation to use a crystalline polyester having the Mn-THF characteristics of the present claims in view of Aoki who shows that such resins are unsuitable. Applicants submit that the rejection of the present claims as anticipated and/or obvious in view of Aoki is therefore not supportable and should be withdrawn.

Lastly, the Office rejects the claims as anticipated and/or obvious in view of a published application to Wintermantel (U.S. 2004/0068049). Applicants traverse the rejection on the same grounds discussed above for the rejection in view of Aoki and the obviousness-type double patenting rejections (i.e., lack of inherency and the fact that the claimed invention is shown to be superior).

Applicants have shown that not all crystalline polymers of 1,6-hexanediol and fumaric acid inherently have the Mn-THF characteristics recited in present Claim 1 and further that the claimed crystalline polymer is able to provide substantially improved performance in comparison to the crystalline polymers that do not meet this requirement of the present claims.

Applicants thus request withdrawal of the rejection in view of Wintermantel.

For the reasons discussed above, Applicants submit that all now-pending claims are in condition for allowance. The mailing of a Notice of Allowance is respectfully requested.

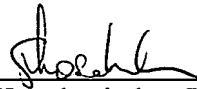
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